Permit Fact Sheet

General Information

Permit Number:	WI-0020184-10-0	
Permittee Name:	Village of Grafton Water & Wastewater Utility	
Address:	860 Badger Circle	
City/State/Zip:	Grafton, WI, 53024	
Discharge Location:	The west bank of the Milwaukee River (South), approximately 750 feet south of the Falls Road bridge. (Lat: 43.30695°N Long: -87.95329°W)	
Receiving Water:	Milwaukee River (South) (Milwaukee River (South) Watershed, Milwaukee River Basin) in Ozaukee County	
StreamFlow ($Q_{7,10}$):	24 cfs	
Stream Classification:	Warm water sport fish community; non-public water supply	
Design Flow(s)	Daily Maximum	8.5 MGD
	Weekly Maximum	5.75 MGD
	Monthly Maximum	3.5 MGD
	Annual Average	2.5 MGD
Significant Industrial Loading?	No. PACE Industries is listed as a categorical industrial user,	
Operator at Proper Grade?	Yes; Tim Nennig the OIC is certified in all plant subclasses. Grafton is an Advanced facility in subclasses A1, B, C, D, P, L, and SS.	
Approved Pretreatment Program?	N/A	

Facility Description

The Village of Grafton Water & Wastewater Utility owns and operates a 2.5 MGD wastewater treatment facility that serves a population of approximately 12,000 residents in the Village of Grafton and one categorial industrial user (PACE Industries). The facility is a single stage activated sludge wastewater treatment facility that provides preliminary treatment through mechanical bar screens, an aerated grit chamber, and addition of ferric chloride to the aerated grit chamber for phosphorus removal. Wastewater is then pumped to two primary clarifiers, followed by fine bubble aeration and four final clarifiers. Two clarifiers are located within the compact plants and two are separate. Effluent is disinfected through an ultraviolet disinfection system. Sludge is treated via anaerobic digestion, thickened by a gravity belt thickener, and transferred to off-site storage before land application by another permitted facility. The Department has found the facility to be in substantial compliance with the current permit.

Sample Point Designation

Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)
701	Flow 1.6 MGD; BOD_5 192 mg/L; TSS 197 mg/L (All June 2015 through November 2019 avg)	INFLUENT: 24-hr flow proportional composite sampler located in the north service building MIP room with intake in the headworks building after the bar screen and prior to grit chamber. Influent flow measured with an 18-inch Parshall flume located immediately upstream of influent lift pumps and downstream of grit chamber. Plant sidestreams are not included in influent flow measure or sample.
001	BOD_5 6.6 mg/L; TSS 4.6 mg/L (All June 2015 through November 2019 avg)	EFFLUENT: 24-hr flow proportional composite sampler located immediately prior to UV disinfection process. Grab samples taken after aeration and UV disinfection.
002	192 dry US tons generated annually (per 2020 permit application)	Anaerobically digested, gravity belt thickened, Class B, liquid sludge. Representative samples shall be taken from the sludge hauler truck fill pipe. Sludge samples shall be collected prior to land application and test results shall be reported on Form 3400-49 'Waste Characteristics Report'. Hauled sludge reports shall be submitted on Form 3400-52 'Other Methods of Disposal or Distribution Report' following each year that the sludge is hauled.
107	N/A	Collect the mercury field blank using standard sample handling procedures.
601	New sample point added as a condition of adaptive management requirements.	In-stream Sampling Point 601: Representative water samples shall be collected from the Milwaukee River. Sample Point 601 is located downstream of the Grafton Water & Wastewater Utility outfall, at the County Highway T Bridge (43.29477N, -87.94385W). Sample point 601 correlates with the sample location described in the approved AM Plan No. WQT-2020-0012 (January 2020).

1 Influent - Proposed Monitoring

1.1 Sample Point Number: 701- INFLUENT PLANT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD_5, Total		mg/L	4/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	4/Week	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Annual	24-Hr Flow Prop Comp	See 'Mercury Monitoring' section in permit.

1.1.1 Changes from Previous Permit:

Total Phosphorus and Total Ammonia Nitrogen influent monitoring were removed from the proposed permit.

1.1.2 Explanation of Limits and Monitoring Requirements

Total Phosphorus and Total Ammonia Nitrogen: Monitoring requirements for total phosphorus and total ammonia nitrogen were initially included in reissued permits to provide better characterization of influent wastewater. Review of data submitted from June 2015 to November 2019 show consistent trends in influent loading. Therefore, monitoring of influent phosphorus and total ammonia nitrogen as operational parameters are removed from the proposed permit. The permittee may elect to continue monitoring influent total phosphorus and total ammonia nitrogen as an operational parameter, but it is no longer required.

BOD_5 and Total Suspended Solids: Tracking of BOD_5 and Suspended Solids are required for percent removal requirements found in s. NR 210.05, Wis. Adm. Code.

Total Recoverable Mercury: Mercury monitoring is included in the proposed permit pursuant to s. NR 106.145, Wis. Adm. Code. Required field blanks for Mercury monitoring per ss. NR 106.145 (9) and (10), Wis. Adm. Code requirements. The permittee shall collect a mercury field blank for each set of mercury samples (a set of samples may include a combination of influent, effluent or other samples all collected on the same day). The permittee shall report results of influent and effluent samples and field blanks to the Department on Discharge Monitoring Reports.

2 Inplant - Proposed Monitoring and Limitations

2.1 Sample Point Number: 107- Mercury Field Blank

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Mercury, Total Recoverable		ng/L	Annual	Blank	See 'Mercury Monitoring' section in permit.

2.1.1 Changes from Previous Permit:

No changes from previous permit.

2.1.2 Explanation of Limits and Monitoring Requirements

Total Recoverable Mercury: Required field blanks for Mercury monitoring per ss. NR 106.145(9) and (10), Wis. Adm. Code, requirements. The permittee shall collect a mercury field blank for each set of mercury samples (a set of samples may include a combination of influent, effluent or other samples all collected on the same day). The permittee shall report results of influent and effluent samples and field blanks to the Department on Discharge Monitoring Reports.

3 Surface Water - Proposed Monitoring and Limitations

3.1 Sample Point Number: 001- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
BOD_5, Total	Weekly Avg	45 mg/L	4/Week	24-Hr Flow	November - April

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
				Prop Comp	
BOD_5, Total	Weekly Avg	33 mg/L	4/Week	24-Hr Flow Prop Comp	May - October
BOD_5, Total	Monthly Avg	30 mg/L	4/Week	24-Hr Flow Prop Comp	Year-round
Suspended Solids, Total	Weekly Avg	45 mg/L	4/Week	24-Hr Flow Prop Comp	November - January
Suspended Solids, Total	Weekly Avg	12 mg/L	4/Week	24-Hr Flow Prop Comp	February - October
Suspended Solids, Total	Monthly Avg	12 mg/L	4/Week	24-Hr Flow Prop Comp	Year-round
Suspended Solids, Total	Weekly Avg	261 lbs/day	Weekly	Calculated	Limit effective in January.
Suspended Solids, Total	Weekly Avg	298 lbs/day	Weekly	Calculated	Limit effective in November.
Suspended Solids, Total	Weekly Avg	252 lbs/day	Weekly	Calculated	Limit effective in December.
Nitrogen, Ammonia (NH3-N) Total	Daily Max	20 mg/L	4/Week	24-Hr Flow Prop Comp	Limit effective November through April.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	16 mg/L	4/Week	24-Hr Flow Prop Comp	November - March
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	10 mg/L	4/Week	24-Hr Flow Prop Comp	Limit effective in April.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	17 mg/L	4/Week	24-Hr Flow Prop Comp	May - September
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	14 mg/L	4/Week	24-Hr Flow Prop Comp	Limit effective in October.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	10 mg/L	4/Week	24-Hr Flow Prop Comp	November - March
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	6.3 mg/L	4/Week	24-Hr Flow Prop Comp	Limit effective in April.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	12 mg/L	4/Week	24-Hr Flow Prop Comp	May - September
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	9.0 mg/L	4/Week	24-Hr Flow Prop Comp	Limit effective in October.
pH Field	Daily Min	6.0 su	5/Week	Grab	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
pH Field	Daily Max	9.0 su	5/Week	Grab	
Dissolved Oxygen	Daily Min	6.0 mg/L	5/Week	Grab	Limit effective May through October. Monitoring only November through April.
Fecal Coliform	Geometric Mean - Monthly	400 #/100 ml	Weekly	Grab	Limit effective May through September annually until the E. coli limit goes into effect per the Effluent Limitations for E. coli Schedule.
E. coli		#/100 ml	Weekly	Grab	Monitoring only May through September annually until the final limit goes into effect per the Effluent Limitations for E. coli Schedule.
E. coli	Geometric Mean - Monthly	126 #/100 ml	Weekly	Grab	Limit effective May through September annually per the Effluent Limitations for E. coli Schedule.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Limit effective May through September annually per the Effluent Limitations for E. coli Schedule. See the E. coli Percent Limit section below. Enter the result in the DMR on the last day of the month.
Mercury, Total Recoverable		ng/L	Annual	Grab	See the Mercury Monitoring section in permit.
Phosphorus, Total	Monthly Avg	1.0 mg/L	4/Week	24-Hr Flow Prop Comp	This is a technology-based effluent limit that remains in effect throughout the permit term. This limit also serves as an interim limit until the 0.6 mg/L adaptive management interim limit takes effect on May 1, 2021.
Phosphorus, Total	6-Month Avg	0.6 mg/L	4/Week	24-Hr Flow Prop Comp	This is an Adaptive Management interim limit that goes into effect May 1, 2021. An interim limit of 0.5 mg/L may be effective during future permit terms. See the Schedules section and effluent

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					requirements in permit.
Phosphorus, Total		lbs/day	Monthly	Calculated	Calculate the daily mass discharge of phosphorus in lbs/day on the same days phosphorus sampling occurs.
Nitrogen, Nitrite + Nitrate Total		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Total Kjeldahl		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Total		mg/L	Quarterly	Calculated	Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annually in rotating quarters. See WET Testing subsection in permit.
Chronic WET	Monthly Avg	2.6 TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annually in rotating quarters. See WET Testing subsection in permit.

3.1.1 Changes from Previous Permit

Total Suspended Solids TMDL Limits: Mass-based, weekly average TSS limits of 261 lbs/day (January), 298 lbs/day (November), and 252 lbs/day (December) were added to the permit to comply with requirements of the Milwaukee River Basin TMDL. Effluent concentration (mg/L) shall be monitored and reported 4 times per week upon permit reissuance and will be used to calculate amounts reported for mass-based limits. Effluent concentration limits were also changed to meet requirements of the TMDL. The previous weekly average concentration limits of 45 mg/L (November-April) and 33 mg/L (May-October) were changed to 45 mg/L (November-January) and 12 mg/L (February-October). The previous monthly average concentration limit of 30 mg/L (year-round) was reduced to 12 mg/L (year-round).

Fecal Coliform and E. coli: Fecal coliform monitoring and limits have been replaced with Escherichia coli (E. coli) monitoring and limits. E. coli monitoring is required at the permit effective date. An interim fecal coliform limit of 400 #/100 ml as a monthly geometric mean will apply from the permit effective date through the end of a schedule. At the end of the schedule, E. coli limits of 126 #/100 ml as a monthly geometric mean that may never be exceeded and 410 #/100ml as a daily maximum that may not be exceeded more than 10 percent of the time in any calendar month will apply.

Total Phosphorus: For this permit term, the Village of Grafton will begin implementing Adaptive Management Plan WQT-2020-0012 (January 2020) to meet the phosphorus TMDL derived limits as allocated in the Milwaukee River Basin TMDL. A total phosphorus Adaptive Management Interim Limit of 0.6 mg/L will apply starting in 2021.

Total Nitrogen Monitoring (TKN, N02 + N03 and Total N): Quarterly monitoring was added to the proposed permit.

Whole Effluent Testing: A chronic monthly average limit of 2.6 TUc was added to the proposed permit.

Chloride: Chloride monitoring was removed from the proposed permit.

Temperature: Temperature monitoring was removed from the proposed permit.

3.1.2 Explanation of Limits and Monitoring Requirements

Categorical Limits

- **Total BOD_5, Total Suspended Solids, pH, and Dissolved Oxygen:** Standard municipal wastewater requirements for BOD_5, total suspended solids, pH, and dissolved oxygen are included based on ch. NR 210, Wis. Adm. Code 'Sewage Treatment Works' requirements for discharges to fish and aquatic life streams. Chapter NR 102, Wis. Adm. Code 'Water Quality Standards for Surface Waters' also specifies requirements for pH for fish and aquatic life streams.

Water Quality Based Limits and WET Requirements and Disinfection

Refer to the "Water Quality-Based Effluent Limitations for the Grafton Water & Wastewater Utility", prepared by Nicole Krueger, dated June 16, 2020 and used for this reissuance.

- **Total Ammonia Nitrogen:** Current acute and chronic ammonia toxicity criteria for the protection of aquatic life are included in Table 2C and Table 4B of ch. NR 105, Wis. Adm. Code (effective March 1, 2004). Subchapter IV of ch. NR 106 establishes procedures for calculating water quality-based effluent limitations (WQBELs) for ammonia (effective March 1, 2004).
- **E. Coli:** Revisions to bacteria surface water quality criteria to protect recreational uses and accompanying E. coli WPDES permit implementation procedures became effective May 1, 2020. The new rule requires that WPDES permits for facilities with required disinfection include monitoring for E. coli while facilities are disinfecting during the recreation period and establish effluent limitations for E. coli established in s. NR 210.06 (2), Wis. Adm. Code. The administrative code rule changes included the following actions: revised the bacteria water quality criteria from fecal coliform to E. coli to protect recreation in ch. NR 102, Wis. Adm. Code; removed fecal coliform criteria for certain individual waters from ch. NR 104, Wis. Adm. Code; revised permit requirements for publicly and privately owned sewage treatment works in ch. NR 210, Wis. Adm. Code; and updated approved analytical methods for bacteria in ch. NR 219, Wis. Adm. Code.
- **Total Recoverable Mercury:** Representative data shows there is no reasonable potential for Grafton to exceed the water quality-based 1.3 ng/L monthly average limit, therefore no mercury limit is recommended in the proposed permit. Annual mercury monitoring is continued in the proposed permit. Requirements for mercury are included in s. NR 106.145, Wis. Adm. Code.
- **Total Phosphorus:** The proposed permit will be Grafton's second permit term under new administrative rules for phosphorus discharges that took effect December 1, 2010. Details regarding the administrative rules for phosphorus discharges may be found at: http://dnr.wi.gov/topic/surfacewater/phosphorus.html. Phosphorus rules are contained in s. NR 102.06 and ch. NR 217, Subchapter III, Wis. Adm. Code. A monthly average limit of 1 mg/L is continued throughout the permit term. An Adaptive Management Interim limit of 0.6 mg/L expressed as a 6-month average (averaging period of May through October and November through April) becomes effective May 1, 2021.
- **Adaptive Management for Total Phosphorus Compliance:** Grafton requested, and the Department approved, a plan to implement a watershed adaptive management approach under s. NR 217.18, Wis. Adm. Code and s. 283.13(7) Wis. Stats. as a means for Grafton to achieve compliance with the phosphorus water quality standard in s. NR 102.06, Wis. Adm. Code. The phosphorus limitations and conditions in this permit reflect the approved Adaptive Management (AM) Plan WQT-2020-0012 (January 2020). The permittee shall design and implement the actions identified in the approved AM Plan WQT-2020-0012 (January 2020) in accordance with the goals and measures identified. The goal of the AM plan is to reduce phosphorus loadings within the watershed action area by a minimum of 322 lbs/yr by the end of this permit term. In addition, annual progress reports are required. See Schedules section for more details. The Department may terminate the AM option based on the reasons enumerated in NR 217.18(3)(e)2, Wis. Adm. Code.

The permit contains an interim adaptive management phosphorus limit of 0.6 mg/L expressed as a six-month seasonal average and a compliance schedule for meeting the limit starting May 1, 2021. The averaging periods for the six-month average limit are May through October and November through April. Compliance with the 0.6 mg/L six-month interim limit is evaluated at the end of each six-month period on April 30 and October 31 annually. The 1.0 mg/L monthly average phosphorus limit is in effect for the duration of the reissued permit.

Surface water monitoring requirements are included in the proposed permit in support of the goals and measures of the Adaptive Management Plan and are discussed in more detail in following subsections of this fact sheet. Sampling is required on the day(s) each week as outlined in the approved Adaptive Management Plan.

- **Whole Effluent Toxicity:** Whole effluent toxicity (WET) testing requirements are determined in accordance with ss. NR 106.08 and NR 106.09, Wis. Adm. Code, as revised August 2016. (See the current version of the Whole Effluent Toxicity Program Guidance Document and checklist and WET information, guidance and test methods at http://dnr.wi.gov/topic/wastewater/wet.html). Based on data collected from 4/11/2006 to 10/15/2019, no reasonable potential for acute whole effluent toxicity is shown, and therefore a limit is not required. According to requirements specified in s. NR 106.08. Wis. Adm. Code, and because reasonable potential for chronic toxicity exists, a chronic WET limit is included in the proposed permit. Chronic WET tests are scheduled in the following quarters: April-June 2021; October-December 2022; July-September 2023, January-March 2024, and April-June 2025.
- **Total Nitrogen Monitoring (NO2 + NO3, TKN and Total N):** The Department has included effluent monitoring for Total Nitrogen in the permit through the authority under s. 283.55(1)(e), Wis. Stats., which allows the department to require the permittee to submit information necessary to identify the type and quantity of any pollutants discharged from the point source, and through s. NR 200.065(1)(h), Wis. Adm. Code, which allows for this monitoring to be collected during the permit term. Quarterly effluent monitoring for Total Nitrogen is included in the permit because of the potential for higher nitrogen loading resulting from higher flows (major facilities), higher concentrations, or both. More information on the justification to include total nitrogen monitoring in wastewater permits can be found in the "Guidance for Total Nitrogen Monitoring in Wastewater Permits" dated October 1, 2019.
- **Chloride:** The 4-day P_{99} (486 mg/L) and 1-day P_{99} (538 mg/L) were significantly less than calculated water quality-based effluent limitations, therefore no water quality-based effluent limit or monitoring is included in the proposed permit.
- **Temperature:** Surface water quality standards for temperature took effect on October 1, 2010 and are detailed in chs. NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. Based on available effluent temperature data, no effluent limits or monitoring are recommended, therefore, temperature monitoring has been removed from the proposed permit

3.2 Sample Point Number: 601- Milwaukee River Downstream

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow River		cfs	Monthly	Measure	Provide an estimate of river flow for each day that in-stream phosphorus monitoring is performed May 1 through October 31 annually.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow River		cfs	Per Occurrence	Measure	Voluntary river flow estimates for each day that in-stream phosphorus monitoring is performed November 1 through April 30 annually.
Phosphorus, Total		mg/L	Monthly	Grab	Collect samples monthly May 1 through October 31 annually. See permit subsections for sampling and reporting requirements.
Phosphorus, Total		mg/L	Per Occurrence	Grab	Voluntary monitoring November 1 through April 30 annually. See permit subsections for sampling and reporting requirements.
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate and report total monthly phosphorus loads for the months of May through October annually. See permit subsection for calculation of total monthly loads.
Phosphorus, Total		lbs/month	Per Occurrence	Calculated	Calculated total phosphorus loads may also be reported for the months of November through April, as data is available. See Permit Subsection for calculation of total monthly loads.

3.2.1 Changes from Previous Permit

Downstream surface water monitoring was not required during the previous permit term. Monitoring is included as part of the approved Adaptive Management Plan WQT-2020-0012 (January 2020) requirements.

3.2.2 Explanation of Limits and Monitoring Requirements

As part of the Adaptive Management Plan requirements, downstream monitoring for river flow rate, in-stream phosphorus concentration and total monthly in-stream phosphorus loads is required during the months of May through October. Monitoring for these same parameters is voluntary during the months of November through April. When voluntary monitoring is completed, results must be reported on the monthly eDMR. The in-stream phosphorus concentration and river flow rate are used to calculate the total monthly loading of phosphorus in the Milwaukee River on a monthly basis. This monitoring will allow the permittee to demonstrate reductions in phosphorus loading for each month of the year.

4 Land Application - Proposed Monitoring and Limitations

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
002	Class B	Liquid	Fecal Coliform	Injection	Land Application	192 dry. U.S. tons (per 2020 permit application)
Does sludge management demonstrate compliance? **Yes**						
Is additional sludge storage required? **No** **Note:** Grafton's municipal sludge is hauled off-site to another permitted facility for land application on approved fields.						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? **No**						
Is a priority pollutant scan required? **No** Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.						

4.1 Sample Point Number: 002- Hauled Sludge

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Annual	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Annual	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Composite	
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	
Nitrogen, Ammonium (NH4-N) Total		Percent	Annual	Composite	
Phosphorus, Total		Percent	Annual	Composite	
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	
Potassium, Total Recoverable		Percent	Annual	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Sample once in 2022.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Sample once in 2022.

4.1.1 Changes from Previous Permit:

Monitoring requirements for Total Ammonium Nitrogen, Total Phosphorus, Water Extractable Phosphorus, and Total Recoverable Potassium were added to the proposed permit. Monitoring for these parameters and Lists 1 through 4 in the permit are only required if land application occurs directly by Grafton under the proposed permit. Should Grafton choose to land apply occur during the permit term, the Department should be notified 60 days prior to land application.

4.1.2 Explanation of Limits and Monitoring Requirements

Requirements for land application of municipal sludge are determined in accordance with ch. NR 204, Wis. Adm. Code. Ceiling and high-quality limits for metals in sludge are specified in s. NR 204.07(5). Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07(7) for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k). Land application of waste shall be done in accordance with the permit conditions and applicable codes. All land application sites shall be approved prior to their use. To receive a list of approved sites, or to be notified of potential approvals, contact the WDNR compliance staff.

5 Schedules

5.1 Effluent Limitations for E. coli

The permittee shall comply with surface water limitations for E. coli as specified. No later than 14 days following each compliance date, the permittee shall notify the Department in writing of its compliance or noncompliance. If a submittal is required, a timely submittal fulfills the notification

Required Action	Due Date
Status Update: The permittee shall submit information within the discharge monitoring report (DMR) comment section documenting the steps taken in preparation for properly monitoring and	02/21/2021

testing for E. coli including, but not limited to, selected test method and location of sampling.	
Operational Evaluation Report: The permittee shall prepare and submit an Operational Evaluation Report to the Department for review and approval. The report shall include an evaluation of collected effluent data and proposed operational improvements that will optimize efficacy of disinfection at the treatment plant during the period prior to complying with final E. coli limitations and, to the extent possible, enable compliance with the final E. coli limitations. The report shall include a plan and schedule for implementation of the operational improvements. These improvements shall occur as soon as possible, but not later than April 30, 2022. The report shall state whether the operational improvements are expected to result in compliance with the final E. coli limitations. The permittee shall implement the operational improvements in accordance with the approved plan and schedule specified in the Operational Evaluation Report and in no case later than April 30, 2022. If the Operational Evaluation Report concludes that the operational improvements are expected to result in compliance with the final E. coli limitations, the permittee shall comply with the final E. coli limitations by April 30, 2022 and the permittee is not required to comply with subsequent milestones identified below in this compliance schedule (‘Submit Facility Plan’, 'Final Plans and Specifications', 'Treatment Plant Upgrade to Meet Limitations', ‘Construction Upgrade Progress Report’, 'Complete Construction', 'Achieve Compliance'). FACILITY PLAN - If the Operational Evaluation Report concludes that operational improvements alone are not expected to result in compliance with the final E. coli limitations, the permittee shall initiate development of a facility plan for meeting final E. coli limitations and comply with the remaining required actions in this schedule of compliance. If the Department disagrees with the conclusion of the report, and determines that the permittee can achieve final E. coli limitations using the existing treatment system with only operational improvements, the Department may reopen and modify the permit to include an implementation schedule for achieving the final E. coli limitations sooner than April 30, 2025.	11/30/2021
Submit Facility Plan: If the Operational Evaluation Report concluded that the permittee cannot achieve final E. coli limitations with operational improvements alone, the permittee shall submit a Facility Plan per s. NR 110.09, Wis. Adm. Code. The permittee may submit an abbreviated facility plan if the Department determines that the modifications are minor.	04/30/2022
Final Plans and Specifications: The permittee shall submit final construction plans to the Department for approval pursuant to ch. NR 108, Wis. Adm. Code, specifying treatment plant upgrades that must be constructed to achieve compliance with final E. coli limitations and a schedule for completing construction of the upgrades by the complete construction date specified below.	03/31/2023
Treatment Plant Upgrade to Meet Limitations: The permittee shall initiate bidding, procurement, and/or construction of the project. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41. Stats., prior to initiating activities defined as construction under ch. NR 108, Wis. Adm. Code. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications.	09/30/2023
Construction Upgrade Progress Report: The permittee shall submit a progress report on construction upgrades.	09/30/2024
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades.	03/31/2025
Achieve Compliance: The permittee shall achieve compliance with final E. coli limitations.	04/30/2025

5.1.1 Explanation of Schedule

A schedule is included in the permit to provide time for the permittee to investigate options for meeting new effluent E. coli water quality-based effluent limits while coming into compliance with the limits as soon as reasonably possible.

5.2 Adaptive Management Interim Limit Compliance Update

Required Action	Due Date
Comply with Adaptive Management Interim Limit: The Adaptive Management interim effluent limit of 0.6 mg/L as a six-month average goes into effect. The averaging periods are May through October and November through April. Compliance with the 6-month average limit is evaluated at the end of each 6-month period on April 30 and October 31 annually.	05/01/2021

5.2.1 Explanation of Schedule

This compliance schedule provides the permittee until May 1, 2021 to comply with the phosphorus adaptive management limit of 0.6 mg/L. The permittee has shown the ability to comply with this limit for less than one year. The interim limit becomes effective May 1, 2021 at the beginning of a 6-month averaging period.

5.3 Watershed Adaptive Management Option Annual Report Submittals

The permittee shall submit annual reports on the implementation of AM Plan No. WQT-2020-0012 (January 2020) as specified in the "Phosphorus Limitation(s) and Adaptive Management Requirements" permit section and the following schedule.

Required Action	Due Date
Annual Adaptive Management Report: Submit an annual adaptive management report. The annual adaptive management report shall: o Identify those actions from the Section 2.4 of the approved adaptive management plan that were completed during the previous calendar year and those actions that are in progress; o Evaluate collected monitoring data; o Document progress in achieving the goals and measures identified in the approved adaptive management plan; o Describe the outreach and education efforts that occurred during the past calendar year; o Identify any corrections or adjustments to the adaptive management plan that are needed to achieve compliance with the phosphorus water quality standards specified in s. NR 102.06, Wis. Adm. Code; o Describe any updates needed to Grafton's approved phosphorus optimization plan; o Submit results from all sample points outlined in AM plan No. WQT-2020-0012 (January 2020) to the Department using the Department's Laboratory Data Entry System (LDES).	03/31/2021
Annual Adaptive Management Report #2: Submit an Adaptive Management report with the required information described in this section (see above).	03/31/2022
Annual Adaptive Management Report #3: Submit an Adaptive Management report with the required information described in this section (see above).	03/31/2023
Annual Adaptive Management Report #4: Submit an Adaptive Management report with the required information described in this section (see above).	03/31/2024

Final Adaptive Management Report: Submit the final Adaptive Management (AM) report documenting progress made throughout the AM project in meeting the watershed phosphorus reduction target of 6,700 lbs/yr, and in stream water quality standards specified in s. NR 102.06, Wis. Adm. Code. The report shall summarize AM activities that have been implemented during the current permit term and state which, if any, actions from the approved AM plan No. WQT-2020-0012 (January 2020) were not pursued and why. The report shall include an analysis of trends on both a monthly and six-month average basis for concentrations and mass effluent discharged. Additionally, there should be an analysis of any improvements to the quality of surface waters in the Adaptive Management Action Area focusing on phosphorus and flow results collected during the permit term. The surface water analysis shall evaluate how the in-stream loadings have changed over the permit term in comparison to implemented AM actions.	03/31/2025
Renewal of Adaptive Management Plan for Permit Reissuance: If the permittee intends to seek renewal of AM plan No. WQT-2020-0012 (January 2020) per s. NR 217.18, Wis. Adm. Code, for the reissued permit term, proposed AM goals and actions based on an updated AM plan shall be submitted to the Department for review and approval. The permittee may propose to adjust load reductions required by AM plan No. WQT-2020-0012 (January 2020) either up or down at the beginning of each WPDES permit term to reflect changes in loads associated with point and non-point sources. This schedule may be modified to incorporate any changes in AM goals and actions, removed if the AM program is terminated per the "Adaptive Management Reopener Clause" permit section, or removed if the adaptive management plan has achieved water quality standards as determined by the Department within the AM action area.	06/30/2025
Achieve Water Quality Standards and Adaptive Management Plan Success: All the receiving waters identified within the AM plan WQT-2020-0012 (January 2020) shall comply with water quality standards specified in s. NR 102.06, Wis. Adm. Code. The permittee shall continue to comply with applicable effluent limits required under s. 217.18(3)(e)(3), Wis. Stats. (0.5 mg/L expressed as a 6-month avg and 1.0 mg/L as a monthly avg) and continue monitoring surface waters per AM plan WQT-2020-0012 (January 2020) at a minimum of monthly May through October for total phosphorus.	01/01/2026

5.3.1 Explanation Schedule

This schedule requires the permittee to submit annual adaptive management (AM) annual reports that show progress towards meeting the goals and measures contained in the approved AM plan. The final AM Report for this permit term must document the success of meeting the watershed phosphorus minimum reduction target of 322 lbs/yr. The schedule may be modified at permit reissuance, should changes in AM goals and measures or timing necessitate different dates for schedule items.

Attachments:

Substantial Compliance Determination dated August 21, 2020 and prepared by Curt Nickels

Water Quality Based Effluent Limitations for the Grafton Water & Wastewater Utility dated June 16, 2020 and prepared by Nicole Krueger

Proposed Expiration Date:

December 31, 2025

Justification Of Any Waivers From Permit Application Requirements

No waivers were given from permit application requirements.

Prepared By:

Lisa Creegan, Wastewater Specialist

Date: September 3, 2020

Date (post fact-check): N/A

Date (post-public notice):